Rehabilitation guidelines following Periacetabular osteotomy

Much of the surgery carried out on the Catterall Paediatric Orthopaedic unit at the RNOH is unusual. We have therefore devised guidelines which outline the goals patients should be aiming to achieve during their rehabilitation. These are guidelines and every patient should be assessed and treated as an individual, therefore, there may be variation in timing and outcome but the restrictions MUST remain the same.

Periacetabular osteotomy

A periacetabular osteotomy is performed around the affected acetabulum. The acetabulum is re-orientated to provide greater cover for the femoral head. It is secured in place with two threaded pins until bony healing occurs. It can be a painful procedure due to the extensive bony cuts.
Indications:
• Developmental Dysplasia of the Hip

Possible complications:
• Wound healing/infection
• DVT/PE
• Delayed union or non-union
• Loosening of fixation
• Leg length discrepancy
• Rarely neuropraxia/nerve damage

Expected outcome:
• Functional outcome is heavily dependant upon the pre-operative condition of the hip joint
• Pre-existing damage and arthritis of the hip can have a significant negative affect upon functional outcome
• May take 3-6 months to achieve optimal function
• ROM at hip back to pre-operative level
• Mobilises independently mobile with no aids

Main muscles affected:
• Hip flexors
• Hip abductors
• Quadriceps

Initial rehabilitation phase; 0-6 weeks, until first outpatient review:

Goals:
• Optimise tissue healing
• Ensure adequate pain control
• Patient to be independently mobile with aid(s)
• Hip ROM back to pre-operative level

Restrictions:
• Sitting up no restrictions; as pain allows in early period
• Mobilise first at 24-48 hours as pain allows
• Mobilise with crutches 10 Kg partial weight bearing on operated side with a flat footed gait.
• Discourage tip toe walking with flexed hip or knee
Orthotic appliances:
• None

Pain relief:
• Adequate analgesia, resting positions, ice

Patient education:
• Rehabilitation guidelines
• Home exercise programme

Physiotherapy rehabilitation:
• Hip ROM exercises; aim to achieve pre-operative ROM
• Static muscle strengthening and circulatory exercises
• Patient taught active hip flexion/extension as soon as possible
• Mobilise with an appropriate walking aid
• Practice stairs as appropriate
• Encourage self-management and independence with exercise programme
• Hydrotherapy very beneficial once wounds allow
• Prior to hospital discharge patients must be referred for outpatient physiotherapy

Occupational therapy intervention
Occupational Therapy is not routinely indicated, however, other members of the MDT may make referrals for any specific OT related problems that the patient may be experiencing.

**Intermediate treatment phase; 6-12 weeks after 1st outpatient review**

At the first outpatient review the assessment will focus wound healing and evidence of bony healing at the osteotomy sites. Once radiographic evidence of bony union has been observed then rehabilitation can progress to full weight bearing and resistance exercises.

Goals:
• Improve lower limb function focusing on muscle imbalance around hip and core stability
• Improve balance
• Regain strength in hip flexors and abductors and quadriceps
• Maintain/improve hip range of movement
• Wean from walking aids
Pain relief:
• Adequate analgesia

Physiotherapy rehabilitation:
• Active hip flexor, hip abductor and quadriceps strengthening through range when able with resistance exercises
• Active quadriceps strengthening through range- resistance exercises
• Ensure even muscle balance and activation around hip
• Continue to work on hip ROM
• Teach scar massage techniques if appropriate
• Gait re-education
• Wean walking aid as appropriate
• Balance/proprioception work throughout lower limb
• Ensure even weight bearing
• Core stability work
• Encourage self-management and independence with exercise programme

Late rehabilitation phase; 12 weeks and beyond

Goals:
• Return to function including full ADL, work, school etc.

Patient education:
• Encourage return to normal function

Physiotherapy rehabilitation
As per 6-12 weeks especially working on:
• Gait re-education
• Proprioception work
• Ensure patient is independent with own management and has achieved maximum functional independence

Sporting activities:
• Return to sporting activities is anticipated at around 6 months, as muscle recovery allows.